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Determination of optimal technology for manufacturing dental surgical guides

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Abstract

© Published under licence by IOP Publishing Ltd. This article describes methods of manufacturing surgical guides - their creation in rapid prototyping installations and milling machine grinding. Implantation was carried out using the obtained guides and derating level of installed implants was defined. The work compares existing technologies of surgical guides production and defines a clear advantage of using laser stereolithography technology for product manufacture in quantities greater than one.

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References

[1] Nickenig H J and Eitner S 2007 Reliability of implant placement after virtual planning of implant positions using cone beam CT data and surgical (guide) templates J Craniomaxillofac Surg 35 207-11

[2] Ozan O, Turkyilmaz I, Ersoy AE, McGlumphy EA and Rosenstiel SF 2009 Clinical Accuracy of 3 Different Types of Computed Tomography-Derived Stereolithographic Surgical Guides in Implant Placement J Oral Maxillofac Surg 67 394-401

[3] Chibisova M A, Saleyeva G T, Yarulina Z I and Mikhalev P N 2007 Planirovaniye i analiz khirurgicheskogo etapa dental'noy implantatsii Nauchno-prakticheskiy zhurnal Institut Stomatologii 36 142-143

[4] Yarulina Z I, Saleyeva G T, Chibisova M A, Mikhalev P N and Sagitov I I 2010 Opredeleniye rentgenomorfometricheskikh indeksov nizhney chelyusti po dannym ortopantomografii i dental'noy ob"yemnoy tomografii Nauchno-prakticheskiy zhurnal Institut Stomatologii 46 99-101

[5] Gahleitner A, Watzek G and Imhof H 2003 Dental CT: Imaging technique, anatomy, and pathologic conditions of the jaws Eur Radiol 13 366-76

[6] Kashapov R N, Kashapov L N and Kashapov N F 2017 Analysis and development of methods for obtaining metallic powders for selective laser melting IOP Conference Series: Materials Science and Engineering 240 012071

[7] Kashapov R N, Kashapov L N and Kashapov N F 2015 The research of anodic microdischarges in plasma-electrolyte processing IOP Conference Series: Materials Science and Engineering 86 012019

[8] Kashapov L N, Kashapov N F and Kashapov R N 2013 Research of the impact acidity of electrolytic cathode on the course of the plasma-electrolytic process Journal of Physics: Conference Series 479 012011

[9] Kashapov L N, Kashapov N F and Kashapov R N 2014 Influence of plasma-electrolyte discharge to the glass surface Journal of Physics: Conference Series 567 012024